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COLD WINTERS.

THE frost with which 1867 commenced brings again into prominence the desirability of possessing facile means of ascertaining the relation of present temperatures to those of bygone years; to this end we have prepared the following tables. No doubt they contain *some* errors (for people will talk of so many "degrees of frost," and confuse freezing point with zero), but the general accordance of the returns is sufficient to show their probable correctness.

Table I. needs no comment; excepting a few additions, it is as given by Dr. Lindley in the "Transactions of the Horticultural Society," Second Series, vol ii.

TABLE I.—*Temperatures in January*, 1838.

MIDDLESEX...Chiswick	— 4·5	NORFOLK...Norwich	— 3·0
Hammersmith	— 2·0	DEVONSHIRE...Bicton	18·0
Somerset House	11·4	CORNWALL...Carclew	12·0
SURREY...Walton, nr. Claremont	—14·0	STAFFORDSHIRE...Rolleston Hall	5·0
Claremont	—12·0	WORCESTER...Pitmaston	12·0
KENT...Beckenham	—13·5	WARWICK...Birmingham	— 3·0
Greenwich	— 4·0	LANCASHIRE...Liverpool	9·0
Sevenoaks	— 3·0	YORKS...Doncaster	6·0
Redleaf	— 1·0	Wetherby	10·0
SUSSEX...Arundel	9·0	NORTHUMBERLAND..Belsay Castle	10·0
HAMPSHIRE...N. Stoneham	0·0	GLAMORGAN...Sketty Hall	15·0
Isle of Wight, Binstead	15·0	Singleton	15·0
BERKS...Wallingford	— 5·0	LANARK...Glasgow	— 1·0
BUCKS...Dropmore	6·0	DUBLIN...Dublin	20·0
CAMBRIDGE...Cambridge	3·0	Glasnevin	15·0

This frost was evidently most severe in the environs of London.

The next remarkable cold period was Christmas, 1860; of it we have collected, from a variety of sources, the following ample details:—

TABLE II.—*Temperatures in December*, 1860.

MIDDLESEX...Chiswick	— 1·0	KENT...Dartford	1·0
Hammersmith	0·0	Sandhurst	7·0
Enfield	— 1·0	Lewisham	7·0
Hackney	5·6	Greenwich Observatory	8·0
Camden Town	6·7	Sevenoaks	15·0
Regent's Park	10·9	SUSSEX...Hurstpierpoint	3·0
St. John's Wood	11·0	Uckfield	6·6
Whitehall	12·7	Worthing	17·9
Guildhall	14·5	Fairlight	20·0
SURREY...Weybridge	4·5	HAMPSHIRE...Selborne	— 1·5
Cobham	6·0	Heckfield	2·0
Walton	11·0	Petersfield	7·5
Dorking	12·0	Aldershott	8·0
Battersea	10·5	Southampton	11·0

HAMPSHIRE ..Isle of Wight, Ventnor	22·0
,, ,, Osborne	18·9
BERKSHIRE...Newbury	— 6·0
Welford	— 4·0
Moulsford	— 6·4
Englefield	— 2·0
Wallingford	0·0
Maidenhead	5·0
HERTFORD...Ball's Park	—10·0
Tyttenhanger	— 6·0
Cheshunt	— 5·0
Ware	— 5·0
Sawbridgworth	— 2·0
Harpenden	1·0
Hatfield	4·0
Berkhampstead	4·0
Royston	1·1
BUCKS...Taplow	2·0
Stowe	3·0
Westbury	7·0
Hartwell House	10·0
,, Rectory	7·0
OXFORD ..Henley	— 2·0
,,	— 1·0
Rose Hill	1·0
Oxford Observatory	0·0
NORTHAMPTON ..Apethorpe	4·0
Oundle	4·9
Rockingham	6·0
Overstone	8·0
HUNTINGDON...St. Neots	—12·5
BEDFORD...Cardington	3·6
Aspley	13·5
Bedford	6·0
CAMBRIDGE...Chatteris	— 5·0
,,	— 5·0
Ely	— 5·0
Cambridge	— 5·0
,,	— 4·0
ESSEX...Saffron Walden	—12·0
,, ,,	—12·0
Epping	— 5·0
,,	4.0
Colchester	— 4·0
Apington Hall	— 3·0
Bardfield	— 2·0
Chelmsford	— 2·0
Leyton	1·3
Dunmow	4·0
SUFFOLK...Stowmarket	— 4·0
Bury St. Edmunds	— 5·0
Sudbury	— 4·0
Bungay	— 3·0
NORFOLK...Fakenham	—10·0
Long Stratton	—10·0
Diss	— 3·0
Holkham	0·0
Norwich	1·0
WILTS...Trowbridge	2·0
WILTSHIRE...Calne	2·0
DORSET...Upwey	11·5
Little Bridy	16·2
DEVON...Castle Hill	2·0
Dawlish	8·5
Torquay	22·0
Exeter	13·7
,, High-street	15·9
CORNWALL...Bodmin	14·0
Truro	11·0
Helston	18·0
SOMERSET...Langport	4·0
Bath	8·5
GLOUCESTER...Dymock	— 5·0
Highnam	— 4·5
Witcombe	2·0
Stroud	3·0
Clifton	7·1
Sedbury	14·0
HEREFORD...Ross	— 3·0
STAFFORD...Cheadle	—15·0
Rolleston	—10·0
Tamworth	— 7·0
Lichfield	— 6·0
WORCESTER...Eardiston	— 1·0
WARWICK...Atherstone	— 1·0
Birmingham	— 1·0
LEICESTER...Cole-Orton	3·0
Belvoir Castle	— 1·0
Brigg	—11·0
LINCOLN.. Boston	0·8
Grimsby	— 6·0
Alford	3·0
Grantham	3·0
NOTTINGHAM.. Carlton	—12·0
Highfield House	— 6·0
Beeston	— 8·3
Beesthorpe	— 6·0
Worksop	— 6·0
Kingston Hall	— 5·0
DERBY...Chatsworth	—12·0
Willersley	— 6·0
Radbourne	— 3·0
Osmaston	4·0
Derby	2·0
CHESHIRE...Tarporley	— 8·0
LANCASHIRE...Old Hall, Sale	— 9·8
Thelwall	— 6·0
Wilmslow	— 3·0
Manchester	— 1·3
,, Old Trafford	— 3·0
Latchford	— 3·0
Eccles	— 3·0
Wigan	— 2·0
Holker	11·0
Liverpool	11·2
Stonyhurst	16·1
YORKSHIRE...Thorpe Perrow	—12·0
Bedale	—11·0
Doncaster	— 8·0

YORKSHIRE...Wakefield	— 6·0
,,	— 4·5
Bradford	— 3·0
Kirkham Abbey	— 2·0
Coneysthorp	0·0
Grimston	0·0
Leeds	3·0
Castle Howard	4·0
Malton	8·0
,,	— 6·0
Whitby	10·0
Scarborough	16·0
Ben Rhydding	8·5
Sheffield	4·0
Otley	5·0
Harrogate	9 5
York	— 4·0
DURHAM...Sunderland	8·0
NORTHUMBERLAND...Alnwick...	—10·0
NOROHUMBERLAND...Alnwick...	12·0
Hesleyside	— 5·0
Hexham	2·0
Bywell	3·5
Allenheads	8·3
CUMBERLAND...Carlisle	9·0
,,	2·8
Silloth	1·5
Whitehaven	9·0
WESTMORELAND...Kendal	4·0

WALES.

GLAMORGAN ..Merthyrmaur	10·0
PEMBROKE...Pembroke	22·0
CARDIGAN...Lampeter	5·4
BRECKNOCK . Crickhowell	— 3·0
RADNOR...New Radnor	— 3·0
FLINT...Hawarden	8·5
CARNARVON...Conway	18·0

From this it will be seen that the frost of 1860 was general throughout the country—temperatures below zero being recorded at 78 stations, and even —10 (10 below zero) being quite frequent, registered at 14 stations, and these in all parts of the country, except in the South and South-West.

Table III. is as yet very incomplete, but it seems quite sufficient to show how local has been the severity of the late frost; in fact, except in the Thames valley and at isolated stations, it does not appear to have been nearly so severe as in 1860.

TABLE III.—*Temperatures in January*, 1867.

MIDDLESEX...Staines	— 7·0
Winchmore Hill	— 4·0
Hammersmith	— 3·0
Camden Town	6·7
SURREY...Epsom	—12·0
Cobham Lodge	— 3·0
Cobham (Pyports)	— 6·8
Wimbledon	5·0
Walton	0·0
KENT...Maidstone	0·0
Greenwich Observatory	6·6
SUSSEX...Hastings	13·0
Framfield	6·5
HAMPSHIRE...Southampton	4·0
BERKSHIRE...Wantage	3·0
Maidenhead	— 3·0
Cookham	0·0
Old Windsor	4·0
Wallingford	— 5·0
Long Wittenham	6·0
East Hendred	12·0
HERTFORD...Berkhampstead	0·5
BUCKS...Datchet	— 8·0
OXFORD...Dorchester	— 2·0
SUFFOLK...Ipswich	11·0
NORFOLK...Cossey	4·5
DORSET...Bridport	11·0
DEVON...Exeter	9·0
SOMERSET...Street	3·5
GLOUCESTER...Boyce Court	7·0
Clifton	14·1
HEREFORD ..Leominster	3·0
STAFFORD . Sugnall Hall	— 5·0
WORCESTER...Bromsgrove	2·3
WARWICK...Leamington	12·5
Birmingham	12·7
LEICESTER...Leicester	11·0
Wigston	9·0
NOTTINGHAM...Highfield Ho	10·2
LANCASHIRE...Liverpool Obs.	16·3
YORKSHIRE...York	10·0
Hull	8·0
Malton	6·0
Sheffield	15·5
Wakefield	5·0
NORTHUMBERLAND...Chathill	24·0

Table IV. is intended to indicate approximately the lowest point to which a thermometer, 4 ft. from the ground, and fairly exposed in the suburbs of London, has fallen in each year since 1794. It is not so full and complete as we could wish, but we believe the possible

occasional error of 2° or 3° is outweighed by the convenience of knowing approximately (1) that out of 73 years only two have had the temperature below zero—viz., 1796 and 1838; (2) that the temperature on December 25th, 1796, appears to have been the coldest ever recorded in London, it having been only 5° in the Strand, and about 6° below zero in the suburbs; (3) that the temperature may be expected to fall on one occasion in each year to 15°; (4) that the temperature in 11 years never fell to 20°, and (5) that in 1832 and 1863 its lowest was 25°.

TABLE IV.—*Lowest Temperature in each year from* 1794 *to* 1867.
(LONDON AND ITS SUBURBS.)

YEAR.	Somerset House.	London. J. Haydn.	New Road.	Strand Cary.	Probable Minimum.	YEAR.	Somerset House.	Stratford. Howard.	Greenwich Belville.	Chiswick.	Probable Minimum.
1794	22·0			21·0	16°	1831	24·3	18·0	19·0	13·0	17°
5	7·0			7·0	1	2	27·8		21·0	22·0	22
6	4·0	-16·0?	—4·0	5·0	—6	3	27·3		20·5	22·0	21
7	24·5			26·0	18	4	29·2		23·4	24·0	23
8	11·0			11·0	5	5	21·0		17·2	16·2	16
9	17·0			17·0	11	6	17·5		12·6	13·1	12
1800	18·0			18·0	12	7	24·0		16·0	12·2	15
1	23·0			23·0	17	8	11·4		—4·0	—4·5	—4
2	15·0			14·0	9	9	23·7		20·5	17·0	18
3	19·0			19·0	13	1840	21·2		14·6	12·0	14
4	19·0			19·0	13	1	14·9		5·4	6·0	6
5	23·0			21·0	17	2	27·3		23·0	18·0	21
6	26·0			25·0	20	3			19·7	16·0	20
7	23·0	13·0	13·0	21·0	14	4			20·3	16·0	17
8	18·0	12·0	15·0	16·0	13	5			18·8	14·0	7
9	20·0	18·0	18·0	21·0	17	6			7·7	13·0	19
1810	14·0	10·0	13·0	18·0	10	7			18·8	11·0	11
1		14·0	14·0	21·0	14	8			10·2	19·0	16
2		18·0	17·0	23·0	17	9			15·8	17·0	19
3		19·0	19·0	22·0	19	1850			16·6	16·0	20
4		8·0	14·0	15·0	11	1			18·8	14·0	24
5		17·0	15·0	19·0	16	2			20·0	16·0	25
6		5·0	6·0	12·0	5	3			23·7	15·0	18
7		17·0	22·0	21·0	20	4			25·3	7·0	14
8		16·0	19·0	21·0	17	5			18·0	4·0	11
9		10·0	13·0	16·0	12	6			13·5	0·0	19
1820	20·0	0·0	3·0		6	7			11·1	11·0	20
1	25·0	18·0	19·0		19	8			19·4		20
2	23·0	14·0	18·0		16	9			20·0		18
3	24·0	4·0	8·5		10	1860			20·5		5
4	25·0	19·0	24·0		21	1			19·8	—1·0	14
5	26·0	21·0	24·0		22	2			8·0	6·0	19
6	16·0	10·0	9·1		10	3			16·0	14·0	25
7	16·0	10·0	12·0		11	4			20·4		14
8	25·7	24·0	20·0		21	5			26·5		15
9	18·2	16·0	15·0		15	6			14·3		23
1830	15·8	8·0	10·5		10	7			15·5		5

Strand Cary. 11·0 — Chiswick Roy. Hort. Soc.

Stratford Howard. — Greenwich. Belville.

Greenwich Royal Obsy. — Camden Town.

In conclusion, we submit to the consideration of observers the desirability or otherwise of preparing a fuller table for the frost of January, 1867, and secondly, of preparing a table similar to Table IV.

for other parts of the country. Scores of good registers exist, and we leave it to the observers to send or to withhold the needful data, viz.—(1) the lowest temperature in the air, 4 ft. above the ground, in January, 1867; (2) the lowest temperature in each year as far back as their records extend—not less than ten years. Of course there is no necessary connexion between these two requests—some may *only* have recent observations, others *only* old ones, but either would be useful.

RAIN GAUGE EXPERIMENTS.

To the Editor of the Meteorological Magazine.

December 18*th*, 1866.

SIR,—With reference to the question, now so much discussed in your pages, of the proper material for the funnels of rain gauges, I am disposed to think that the quantity of rain registered depends in a considerable degree upon the surface of the funnel, and whether that surface be or be not of a nature to allow of the speedy flowing off of the water. A *painted* metal funnel is bad, because when the paint is new the rain is apt to stand upon it in drops instead of running down through the pipe, and when old the surface is apt to become cracked and rough, and so retain the water upon it. Of all funnels I should suppose a *copper* one *unpainted*, and kept tolerably free from oxide (not too bright, or the water would in that case also be apt to adhere in drops,) would be best of all; but if porcelain should on trial be found preferable, I suppose that a white enamel (like that upon pans and saucepans) might easily be put upon a *turned iron* funnel, and would be of sufficiently uniform thickness to allow of the area of the funnel being calculated with sufficient accuracy.

As regards another point raised in your pages, I think that the reason why a gauge (properly protected from evaporation) shows a greater rainfall if read monthly than if read daily, is this: that every time the water is poured from out of the receiving-vessel into the graduated glass a certain quantity remains adhering to the sides of the vessel and is *not registered at all;* and that where the reading is taken *daily* this subtraction must occur *whenever any rain has fallen*, but where taken *monthly* can only occur *once in a month*. I have often doubted whether (where daily readings are taken) a greater approach to accuracy might not be obtained by reading from the *apparent* surface of the water in the measuring-glass, rather than from the "*true level*," as advised at p. 25 of your number for April last. I am, Sir, your obedient servant, H. W.

[We have for some years been wishing to try an enamelled funnel, but have alway- been told the heat necessary to the process of enamelling would fatally distort the funnel. We are not opticians, or we might be able to comprehend why a true brass rim could not be rivetted on *after* the heating.—ED.]

DERIVATION OF THE WORD "ANEROID."

To the Editor of the Meteorological Magazine.

Ryde, Isle of Wight, January 1*st*, 1867.

DEAR SIR,—At a philosophical lecture in the Isle of Wight a question was raised as to the derivation of the word "Aneroid," as applied to the barometer of that name. Can you or any of your readers throw any light as to its CORRECT ETYMOLOGY? I am, Sir, your obedient servant,

RICHARD TAYLOR.

[We were not aware that any other derivation had been proposed than *a without*, *νηρος moist*, and *ειδος form*. The "Encyclopædia Britannica," 8th Edition, gives, however, *ἀνέρομαι I inquire*.—ED.]

RAINFALL IN DECEMBER, 1866.

Div.		STATIONS. [The Roman numerals denote the division of the Annual Tables to which each station belongs.]	Height of Gauge. Above Ground ft.	in.	Above Sea Level. feet.	Depth of Rain. Total Fall. inches.	Difference from average 1860–5 inches.	Greatest Fall in 24 hours. Depth. inches.	Date.	Days on which .01 or more fell.
I.	ENGLAND.	Camden Town	0	6	100	2·63	+1·14	·53	5	16
II.		Staplehurst (Linton Park)	0	6	296	1·47	— ·36	·22	6	15
,,		Selborne (The Wakes)	4	0	500 ?	3·08	+ ·34	·62	5	15
III.		Hitchen	2	0	240	1·89	+ ·58	·38	6	19
,,		Banbury	7	0	345	1·88	+ ·21	·40	5	18
,,		Wisbech	0	6	10	2·05	...	·31	15	17
IV.		Bury St. Edmunds (Culford)	1	2	...	2·58	+1·09	·40	5	16
V.		Calne	0	11	250	2·86	...	·67	5	14
,,		Plymouth (Goodamoor)	0	2	580	6·67	+ ·74	·86	5	20
,,		Barnstaple	0	6	31	5·00	+1·88	·64	5	23
,,		Taunton (Fulland's School)	1	4	...	2·06	— ·46	·50	6	16
VI.		Shrewsbury (Highfield)	5	6	200	1·31	— ·37	·50	7	15
,,		Tenbury (Orleton)	0	9	200	1·74	— ·72	·41	4	21
VII.		Leicester (Wigston)	0	6	220	2·15	+ ·63	·39	30	18
,,		West Retford	0	6	50	...	...	...	...	...
,,		Derby	5	0	180	2·22	+ ·67	·41	6	22
VIII.		Manchester	2	7	106	4·15	+1·82	·58	3	24
IX.		York	0	6	50	1·75	— ·05	·54	6	18
,,		Skipton (Arncliffe)	3	0	750	10·05	+5·50	1·23	3	24
X.		North Shields	1	0	124	2·05	— ·15	·40	6	15
,,		Borrowdale (Seathwaite)	1	0	422	25·39	+8·44	3·66	10	25
XI.	WALES.	Abercarn	1	3	450	6·00	...	1·16	3	17
,,		Haverfordwest	2	0	60	4·68	+ ·15	·78	4	20
,,		Rhayader (Cefnfaes)	2	0	880	5·69	+2·40	1·28	3	25
,,		Llanberis (R. Victoria Hotel)	1	0	370	8·52	...	1·25	3	23
XII.	SCOTLAND.	Dumfries	0	5	70	3·40	— ·06	·48	6	22
,,		Hawick (Silverbut Hall)	4	0	512	3·46	...	·72	6	23
XIV.		Ayr (Auchendrane House)	2	3	94	6·32	+2·30	·69	15	21
XV.		Otter House	0	6	130	...	...	..	...	...
XVI.		Leven (Nookton)	0	6	80	2·94	+ ·16	·42	6	17
,,		Stirling (Deanston)	0	0	130	6·37	+2·17	·59	14	25
,,		Logierait	1	0	250	3·42	...	·75	7	18
XVII.		Ballater	0	10	656	2·87	...	·67	30	19
,,		Aberdeen	4	8	115	3·17	...	·71	28	25
XVIII		Inverness (Culloden)	3	0	104	3·86	...	·81	29	17
,,		Fort William	0	8	20	13·83	...	1·45	17	28
,,		Portree	0	4	60	15·44	— ·19	2·40	17	29
,,		Loch Broom	0	8	48	10·05	...	2·50	28	30
XIX.		Helmsdale	1	0	34	5·81	...	1·02	6	22
,,		Sandwick	2	0	78	4·76	+ ·80	·54	6	25
XX.	IRELAND.	Cork	6	0	65	4·22	...	·63	1	24
,,		Waterford	4	0	60	3·57	— ·85	·63	7	27
,,		Killaloe	5	0	128	6·02	+2·53	·82	3	25
XXI.		Portarlington	1	2	236	2·91	— ·28	·40	4	26
,,		Monkstown	0	6	100	1·71	— ·91	·52	6	21
XXII.		Galway	6	0	25	5·60	...	·68	6	25
,,		Bunninadden (Doo Castle)	1	0	...	4·60	...	·72	2	23
XXIII		Bawnboy (Owendoon)	1	3	218 ?	5·57	...	·76	6	25
,,		Waringstown	0	4	191	3·36	...	·48	3	23
,,		Strabane (Leckpatrick)	0	5	260	4·75	...	·44	2	26

+ Shows that the fall was above the average; — that it was below it.

METEOROLOGICAL NOTES ON THE MONTH.

ABBREVIATIONS.—Bar. for Barometer; Ther. for Thermometer; Max. for Maximum; Min. for Minimum; T for Thunder; L for Lightning; T S for Thunderstorm; R for Rain; H for Hail.

ENGLAND.

LINTON PARK.—The whole month remarkably mild, the birds singing as if in March, while many tender plants injured by the frost in November became quite fresh towards the end of the month. Fogs prevailed during the beginning and middle of the month; with some few brisk winds but not at any time high, the prevailing direction being W.S. to S.W., there were ten slight frosts. L on 6th and 17th; evenings (when no moon) very dark.

SELBORNE.—Max. 51°·5 on 6th; Min. 21°·0 on 1st. Wind tempestuous during the month; almost entirely from the S.W., W., or N.W., except on 1st, 8th, 20th, and 24th. Not a flake of snow hitherto, this winter. 28th the most gorgeous sunset I ever behel l. Dense fog all day on 22nd.

HITCHEN.—30th December, bar. lower than at any time since March.

BANBURY.—31st, a little snow. Max. 55°·2; min. 27°. Fog on 22nd.

WISBECH.—26th, gale at 7 p.m., 14 lbs. pressure at 10 p.m.; 31st at 11 p.m., snow 1 in deep; wind S.W. on 20 days; slight frosts on 8 nights, but the month generally was mild. Dense fog all day on 22nd.

CULFORD.—Max. 56° on 6th; min. 17° on 31st. Severe and winterly weather appears to be setting in during the last night of the month and year. Fog on 22nd.

CALNE.—T S at 6 a.m. on 13th in W; violent T S at 8 p.m. on 14th, with H and wind; ·23 in. fell in 20 minutes, and another T S at 6 a.m. on 15th. Gale, with H storms on 7th; on 4th very mild, primroses in bloom, crocus above ground on 20th, and snowdrops on 28th.

GOODAMOOR.—T on 14th and 15th. Max. 53°; min. 24°.

TAUNTON.—L in E. on 12th and 15th; T S from S.W. and ranging northward to E. on 16th. Weather generally mild and even warm during the month; beans and strawberries in flower; slight fall of snow on 31st.

ORLETON.—Temp. variable, but on the whole higher than the average; the air generally damp, with frequent slight falls of R; violent winds on the 4th, 15th, 26th, and 27th; a slight fall of snow on the night of 31st; dense fog all day on the 22nd. Max. 58°·2 on 4th; min. 24°·3 on 20th.

WIGSTON.—Both the temp. and rainfall slightly above the average.

YORK.—Bar. 30·616 at 3 p.m. on 20th, and only 28·990 on 30th.

ARNCLIFFE.—Max. 56°; Min. 28°. A very wet month.

SEATHWAITE.—An excessively wet month, with but little frost till the last day of the year; four days on which the R fall exceeded 2 in.

WALES.

ABERCARN.—A wet and stormy month on the whole, but the latter part mild and calm. T S on night of 14th and another on 15th. There was no frost until the last day of the year, roses, wallflowers, &c., being still in bloom.

HAVERFORDWEST.—A stormy, gloomy, wet month. Very mild; primroses and garden cowslips in bloom, and on the 15th a rose carnation bloomed perfectly. Violent gales on the 6th, 13th to 15th, and again from 26th to the end. The last three days cold and gloomy, with snow. Ther. at or below 32° on 7 nights.

CEFNFAES.—High flood in the Wye on the 3rd. T and very vivid L on the 14th. Weather generally wet and damp through the whole month; only five really fine days. Max. 53°; Min. 19°. Snow on the 31st.

SCOTLAND.

DUMFRIES.—Snow on the hills on the 8th, and here on the 31st. The month has been wet and stormy, with a mild temperature. On the night of the 6th and morning of 7th a violent hurricane, and the bar. fell 1·245 in. in 24 hours. At Christmas the field daisy flowering abundantly, and the furze in blossom. The close of the month wintry, with snow and frost.

SILVERBUT HALL, HAWICK.—A hurricane from the W. on the 6th, and gales from the same quarter on 17th, 18th, 26th, 27th, and 28th. Gardening and husbandry operations in an advanced state, there having been no interruption from frost till the last two days of the month; but it is now pretty keen, and about 3 in. of snow on the level.

AUCHENDRANE.—Month mild, wet and boisterous throughout.

DEANSTON.—No snow during the month, except on the hills. Max. 55°·8; Min. 21°.

LOGIERAIT.—Little frost till the 31st. Roses in bloom at that time. No snow.

BALLATER.—Aurora at 7 p.m. on 25th. The weather throughout (with slight exceptions) very mild. Max. 56°·3 on 18th, higher than for 2 months previously. Bats seen flying about from 22nd to 24th. Auriculas, primroses, &c., in flower. During the last week the weather became wintry, a snow storm commencing on the morning of the 30th, and the year closed with an average depth of 4 inches.

ABERDEEN.—A dull month, with very unsteady Bar., and less than the usual range of temperature. Frosts on 11 nights at 4 ft. from the ground, and on 24 on grass. Max. 53°·5 on 18th; Min. 24°·1 on 31st. Lunar rainbow on 21st.

ROSSE PARSONAGE.—Gale from N.E. through the night of the 6th; gale from S.W. on 18th; sprinkle of snow on 31st. A wet and boisterous month; only three days on which no R was registered. The total fall, 13·83 in., is greater than any month since observations were commenced here (two years ago), except January last, when 14·19 in. fell.

PORTREE.—This month has been very wet, stormy, and changeable throughout. A very bad month for sheep and cattle. Snow on the hills in the middle of the month, but none here till the close.

LOCHBROOM.—The month commenced beautifully, as if borrowing its character from the end of November, but on the 3rd a sweeping gale from the N. threatened great destruction; it was terrific during the whole day. With varying temperature, the month was rainy till the 28th, when we had a fall of 2·50, being more than double the greatest fall registered during the past two years. On the whole it has been a grand grazing month, but at the close intense cold and heavy snow came on suddenly.

SANDWICK.—Very bright Aurora from 7 to 8 p.m. on 25th. Hills white with snow on 7th and 8th, again on 27th. Gale 50 m. per hour from midnight to 5 a.m. on 28th. Ground white with snow on the 30th, and 4 inches deep at the close of the year.

IRELAND.

MONKSTOWN.—Although the total quantity of R was not great, the month was generally wet; the last day's measurement, ·15, consisted principally of snowy sleet, which fell in constant showers, ushering in the new year with quite a wintry appearance. Bar. on 6th, 29·124. One of the most fearful gales that has occurred for a long time was on the 6th and 7th; it commenced about 7 p.m. on 6th, and blew with terrific violence from S. until 11 p.m.; it then lulled, but only to recommence about 2 a.m. on 7th from W.S.W. with almost double fury. The sea outside was terrific, and the mail steamer was two or three hours late owing to the force of the gale.

GALWAY.—Terrific storm commenced about 8 p.m. on 6th, and lasted through the night. Min. 25° on 31st, with snow.

DOO CASTLE.—Wet open month, and as a rule free from frost. Violent storm on night of 6th; several trees snapped asunder, and stacks of corn blown down.

OWENDOON.—Very wet month, high floods; first snow on 31st.

WARINGSTOWN.—A wet and stormy month; the soil thoroughly saturated with moisture, but the temperature somewhat above the average until the last two days, which were cold and wintry. Heavy gales on the 6th and 28th. Snow on the 31st only. Frost on grass on 17 nights.

LECKPATRICK.—6th, gale.; Bar. 28·72 at 11 p.m., rose to 30·22 at 9 a.m. on 7th. Frost on grass 14 nights. Gale from S.W. 17th and 26th. Weather of month mild though stormy. Vegetation very far forward; fruit tree buds unfolding, hepatica in flower, peony rose coming into leaf.

NEWPORT, MONMOUTH.—With reference to the statement, page 52, No. VI., that "*square pieces of ice of upwards of a pound weight each were found in the neighbourhood of the Docks,*" I was informed, after the statement appeared in the local press, that it was a hoax. I was in the thick of the storm, and saw no hailstones apparently more than one inch in diameter. Great damage resulted from the deluge of rain. At a distance of four miles westward of Newport scarcely a drop fell.—W. FLINT.

NOVEMBER METEOR SHOWER.

Observations of the Meteoric Shower, on the night of November the 13th, 1866.

Taken at the Military Hospital Observatory, at Aberdeen.

Estimated numbers, and direction of flights of Stars counted at Aberdeen, by Thomas Turner, in 4 hours, on the night of the 13th November, 1866.	N. to S.	N. to W.	N. to E.	N.E. to S.W.	N.W. to S.E.	S. to W.	S. to N.	S. to E.	E. to W.	E. to S.	W. to E.	N.E. to S.	E. to N.	Total No of Stars counted per hour	Weather during night.	Direction of Wind.	Appearance during night.
From 10.30 p.m. to 11.30 p.m.	94	3	44	10		3	43	4	4	3	6	21		235	Clear but cloudy to S.E.	N.N.E.	The first star was seen fall at 10.30 p.m.
From 11.30 p.m. to 12.30 a.m.	123	53	41	56	53	131			25	6		29	3	421	Ditto.	Ditto.	Stars very brilliant from the N.
From 12.30 a.m. to 1.30 a.m.	389	28	143	86	6		3	8	34	1		6		704	Ditto.	N.W.	Stars brilliant, & an abundance from all quarters like rockets, but generally like fire balls.
From 1.30 a.m. to 2.30 a.m.	280	29	26	73	13	22			43			53		539	Over cast at 2.30 a.m.	W.	From 12.30 a.m. to 2 a.m. sky covered all over with stars darting in all directions.
Total No. counted	886	113	254	225	72	26	77	12	106	10	6	109	3	1889			

THOMAS TURNER, Sergeant A. H. Corps,
Hospital Sergeant 15th D Battalion, Aberdeen.

To the Editor of the Meteorological Magazine.

Rockville, Black Rock, near Dublin, December 18th, 1866.

SIR,—About 1 a.m. Nov. 14th (Dublin time) a brilliant meteor passed from the head of Leo about 10 degrees N.W. of the zenith, disappearing about 40 degrees from the western horizon. It left a brilliant tail behind, some 20 degrees long; this, after remaining stationary some 2 or 2½ minutes, gradually began to shorten and concentrate; then to curve, and in 2 or 2½ minutes more became circular by the two ends meeting together, in fact a perfect ring some 6 or 8 degrees in diameter, the centre being clear sky. The concentration still slowly continued, until in about 2½ or 3 minutes more the clear centre became obliterated, and the whole assumed the appearance of a brilliant, luminous, white globe about 4 or 5 degrees in diameter. In this state it remained some time, 2 or 3 minutes, and

then gradually faded away. I cannot speak accurately as to time, but I think the whole may have occupied some 10 or 12 minutes. The thing was most wonderful—indeed astounding. I am, yours very truly,

THOS. BEWLEY.

P.S. Several persons in Dublin saw the same appearance I have described above.

An Essay on Dew and several Appearances connected with it. By WILLIAM CHARLES WELLS, [M.D., F.R.S.L. & E.] Edited, with Annotations, by L. P. CASELLA, F.R.A.S.; and an Appendix by R. STRACHAN, F.M.S. London: Longmans, cloth 8vo. 163 pages.

MR. CASELLA deserves the thanks of meteorologists for placing within their reach copies of Dr. Wells' scarce, celebrated, and interesting Essay on Dew, with an epitomized biography, a few foot-notes, pointing out the bearings of recent discoveries on Dr. Wells' researches; also an appendix by Mr. Strachan, which consists mainly of quotations from Tyndall's recent works on Heat and Radiation, Glaisher's paper on radiation ("Phil. Trans. 1847"), and other articles bearing on the subject. The notes and appendix have one main fault—there is not enough of either. To take an instance in the appendix: when speaking of summer frosts, no reference is made to the considerable ones experienced in July, 1863, and the beginning of August, 1864, when white frost was general throughout Great Britain, and even ice was formed in several places. This remarkable phenomenon having a special bearing on the influence of vapour on terrestrial radiation, which it is one of the main objects of the appendix to illustrate, for those frosts were unquestionably due to the excessive droughts which preceded their occurrence having rendered the atmosphere unusually dry, and therefore favorable to radiation. We differ from Mr. Casella, who says in the preface—"at the present day the Essay on Dew is the only one [of Dr. Wells' works] which can lay claim to the attention of the general reader;" and think a reprint or abstract of the elaborate review in the "Quarterly" by Dr. Young, and of Dr. Wells' reply published in the "Annals of Philosophy" in April, 1815, would have added to the completeness of the work. These, however, are small matters, pointed out mainly as suggestions, should the present generation require as many editions as when the essay was first brought out in 1814, followed by fresh editions in 1815, 1818, and 1821.

END OF VOL. I.

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